Fast Diode Modules
AMKE 301F

V_{RSM} V	V_{RRM} V	I_{FRMS} = 450 A (maximum value for continuous operation) I_{FAV} = 300 A (sin. 180; 50 Hz; T_C = 43°C)		
1200	1200	AMKE 301-F12		

Symbols and parameters			Values	Units
I_{FAV}	Mean forward current	sin 180; T_C = 85 (100)°C	220 (185)	A
I_{FSM}	Surge forward current	T_{vj} = 25°C; 10 ms T_{vj} = 150°C; 10 ms	4000 3600	A A
i^2t	I^2t value, rating for fusing	T_{vj} = 25°C; 8.3…10 ms T_{vj} = 150°C; 8.3…10 ms	80000 64800	A^2s A^2s
V_F	Forward voltage	T_{vj} = 25°C; I_F = 300 A	max. 2.2	V
$V_{(TO)}$	On-state threshold voltage	T_{vj} = 150°C	max. 1.2	V
r_T	On-state slope resistance	T_{vj} = 150°C	max. 2.75	mΩ
I_{RD}	Direct reverse current	T_{vj} = 25°C; V_{RD} = V_{RRM} T_{vj} = 150°C; V_{RD} = V_{RRM}	max. 1 max. 80	mA
Q_{rr}	Reverse recovery charge	T_{vj} = 125°C I_F = 300 A di/dt_{off} = 2000 A/µs V_R = 600 V	42	µC
I_{RM}	Peak reverse recovery current		165	A
t_{rr}	Reverse recovery time		690	ns
E_{rr}	Energy dissipation during reverse recovery		10.8	mJ
$R_{th(j-c)}$	Thermal resistance, junction to case		0.11	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink		0.05	K/W
T_{vj}	(Virtual) junction temperature		-40 … +150	°C
T_{stg}	Storage temperature range		-40 … +125	°C
V_{isol}	Insulation test voltage (r.m.s.)	a.c. 50 Hz; r.m.s.; 1s / 1min	4800 / 4000	V~
M_S	Mounting torque on heatsink		5 ± 15%	Nm
M_t	Mounting torque for terminals		5 ± 15%	Nm
a	Maximum allowable acceleration		5*9.81	m/s^2
W	Weight		160	g

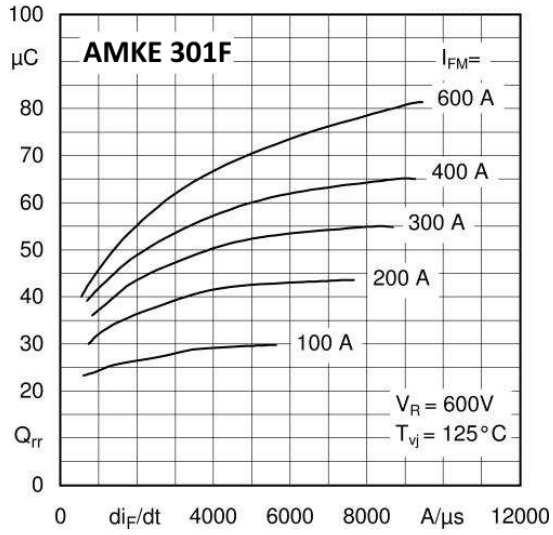


Fig. 1 Typ. recovery charge vs. current decrease

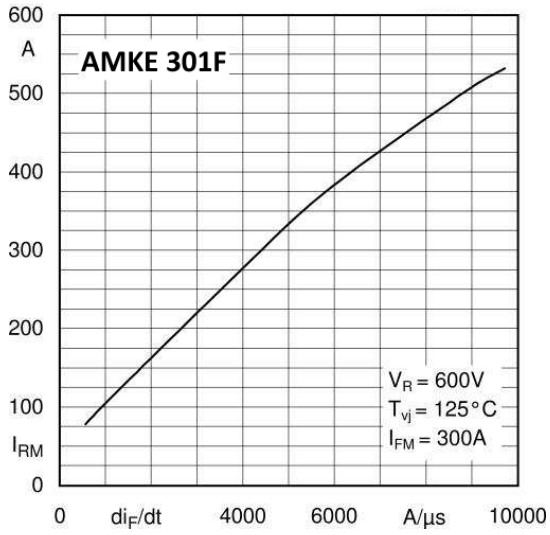


Fig. 2 Peak recovery current vs. current decrease

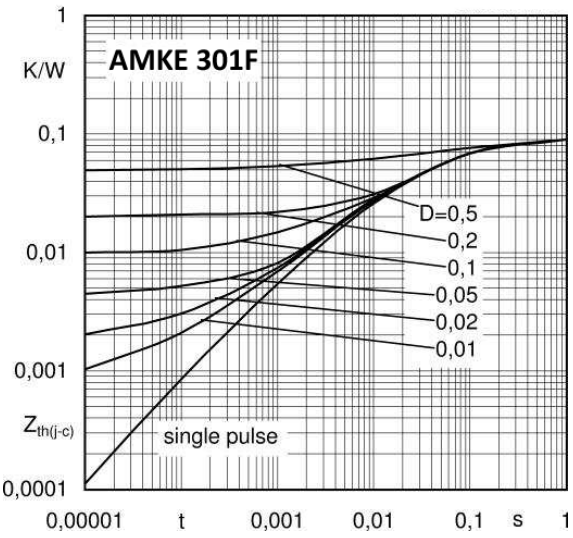


Fig. 3 Transient thermal impedance vs. time

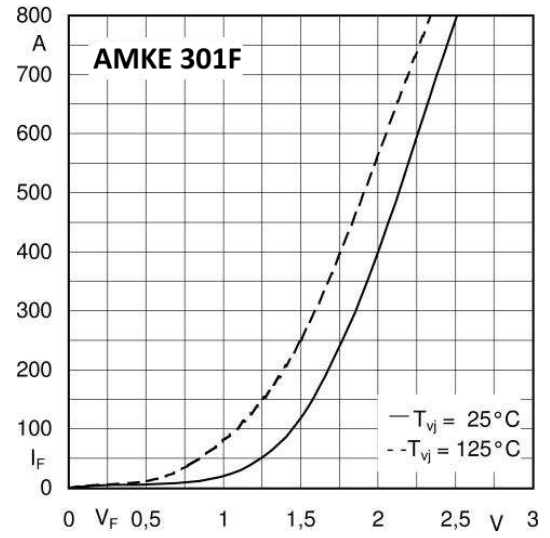


Fig. 4 Typ. forward characteristics

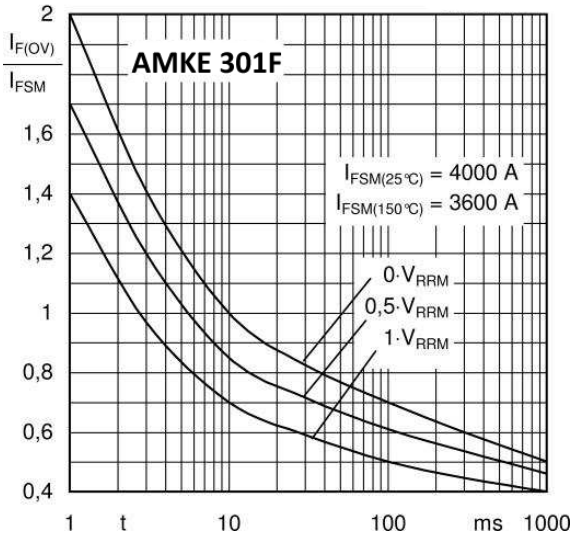
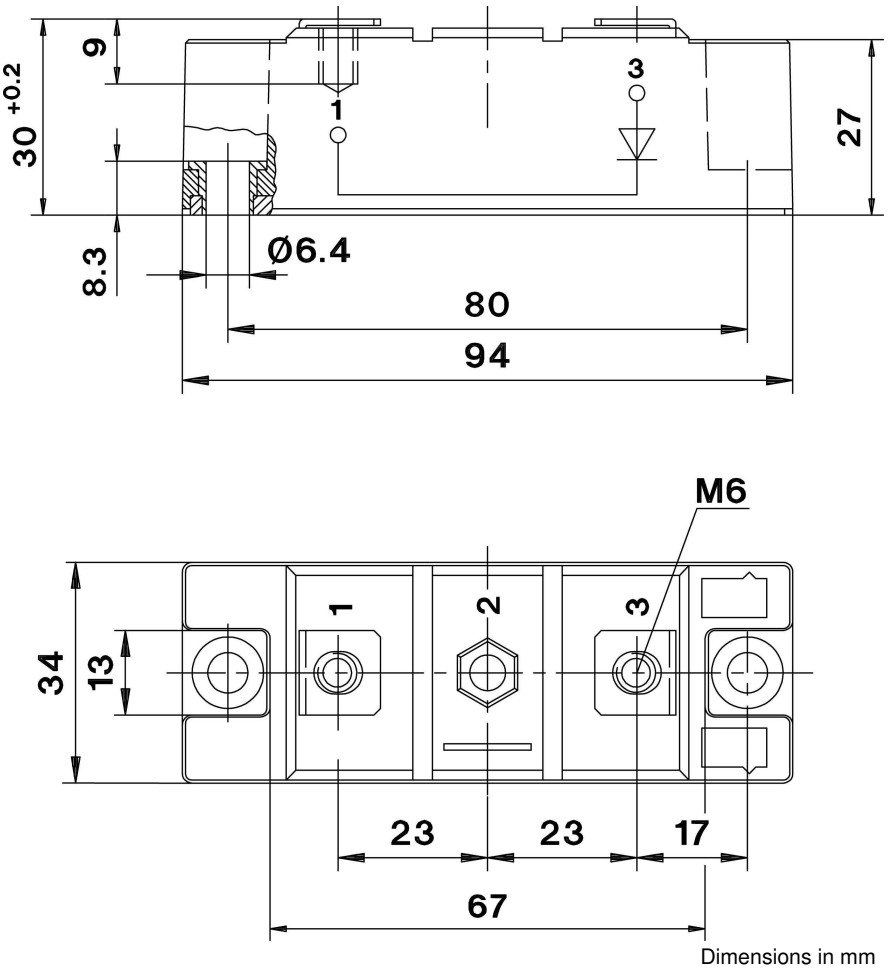


Fig. 5 Surge overload current vs. time

DIMENSIONS



TOPOLOGY OF INTERNAL CONNECTION